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2008 ISM Workshop, Building Mission Success
Abstract and Presentation Outline

Topical Area

(x) Integrated Management for Mission Success
(x) Safety Culture (including HPI)
(x) Work Planning and Control
( ) Contract Transition
(x) Feedback and Improvement

Presentation Title

Monitoring the Long-Term Effectiveness of Integrated Safety Management System (ISMS) Implementation Through Use of a Performance Dashboard Process

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Abstract:

This session will examine a method developed by Federal and Contractor personnel at the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) to examine long-term maintenance of DOE Integrated Safety Management System (ISMS) criteria, including safety culture attributes, as well as identification of process improvement opportunities. This process was initially developed in the summer of 2000 and has since been expanded to recognize the importance of safety culture attributes, and associated safety culture elements, as defined in DOE M 450.4-1, "Integrated Safety Management System Manual." This process has proven to significantly enhance collective awareness of the importance of long-term ISMS implementation as well as support commitments by NNSA/NSO personnel to examine the continued effectiveness of ISMS processes.

Presentation Outline:

I. Introduction

DOE Contractors are required to address ISMS criteria contained in 48 Code of Federal Regulations (CFR) 48 CFR 970.1100-1, "Performance-Based Contracting"; 48 CFR 970.5204-2, "Laws, Regulations, and DOE Directives"; and 970.5223-1, "Integration of Environment, Safety, and Health into Work Planning and Execution," which includes evaluation of the long-term effectiveness of their respective ISMS programs. Long term maintenance considerations for ISMS programs are contained in DOE M 450.4-1, Integrated Safety Management System Manual. In addition to Safety Culture Attributes, this Manual also provides 10 Continuing Core Expectations (CCEs) that can be utilized to evaluate ISMS implementation.

In the summer of 2000, the Nevada Site Office (NSO) established an ISM Council (ISMC). This council is tasked with assisting with implementation of site-wide initiatives as well as evaluating long-term implementation of ISMS program requirements.

II. Method

To assist with reviewing long-term implementation of ISMS, the NSO ISMC developed a performance "dashboard" strategy whereby the ISMS Continuing Core Expectations (CCEs) contained in DOE M 450.4-1 can be qualitatively and consistently evaluated. As illustrated in Table 1, the CCEs contained in DOE M 450.4-1 address a wide series of topics, including work planning, hazard analysis, continuous improvement, as well as budgetary and programmatic considerations.

DOE M 450.4-1 also addresses a series of safety culture attributes that are aligned with associated ISMS Guiding Principles as well as supplemental safety culture elements. Examples include individual attitude, adherence to standards, and organizational learning. This collective guidance was evaluated by the NSO ISMC during development of the detailed criteria for each CCE.

Table 1, CCE Topics

CCE	Criteria	CCE	Criteria
1	Annual ISMS updates	6	Feedback and improvement process
2	ISMS effectiveness	7	Review and update of List A/List B
3	Performance of work	8	Contractor and DOE assessments
4	Roles and responsibilities, line management responsibly for safety	9	Approval of work by DOE
5	Balancing of priorities	10	DOE review of hazard analysis and feedback processes

To assist with the evaluation process, the individual criterion associated with each CCE is reviewed and assigned an individual color value, based upon the color gradients defined in Table 2.

Table 2, Color Gradients	
Blue	Significantly exceeds expectations (e.g., "Best in Class")
Green	Meets or exceeds expectations
Yellow	Requires improvement
Red	Requires significant improvement

For the purposes of this paper, a randomly selected CCE has been populated to reflect review results. The completed dashboard is presented in Table 3. As previously discussed, the evaluated criteria contained for CCE 3 is based upon the guidance provided in DOE M 450.4-1.

Table 3,Completed Dashboard Example				
CCE -3: Work activities reflect effective implementation of the functions of ISMS.				
	Group A	Group B	Group C	Group D
Are higher-level work documents, such as project plans, translated into discrete work packages and procedures with well-defined boundaries and interfaces?	G	B	Y	G
Do work-planning processes provide for early involvement of workers and safety and health to fully define the work to allow identification of hazards?	G	B	Y	G
Are standardized hazard controls developed and used in a graded approach based on project/work complexity, risk performance frequency, and initial hazard screenings?	G	B	Y	G
Is emphasis placed on designing work and/or controls to reduce or eliminate hazards to prevent accidents and unplanned releases and exposures?	G	Y	Y	G
Is work authorization defined at the activity level?	R	G	G	Y
Do individuals question deviations; do team members support one another through awareness of each other's actions and constructive/timely feedback when necessary?	R	G	G	Y
Is worker involvement in hazard identification and work planning processes adequate and mandated by procedures?	Y	G	G	G

In addition to examining implementation status for each of the CCE criterion, this process also assigns a color gradient at the CCE title level as well as providing a designation of overall performance. This methodology affords senior management with an evaluation of the collective health the ISMS program as well as illustrating areas that have, or have not, met performance expectations. Refer to Table 4 for an example of the CCE roll-up evaluation.

Table 4, CCE Roll-Up					
CCE	Performance	CCE	Performance	CCE	Performance
1	▲ Y	5	▲ G	9	◄► G
2	◄► G	6	◄► B	10	▲ G
3	▼ G	7	▼ Y		
4	▲ B	8	◄► Y		

Similar the previous discussion for evaluating detailed CCE criterion, the CCE roll-up provides enhanced visibility for the collective status of ISMS long-term implementation. This roll-up approach can also assist senior management with budget allocation decisions in addition to ensuring existing funding is not in advertently decreased.

III. Results

Dashboard color gradients are developed by each contractor, and NNSA/NSO personnel, on an annual basis and presented during an ISMC meeting. This meeting is also utilized to examine contractor specific challenges that could have site-wide implications. The results of this performance dashboard review are complied into a Nevada Site Office ISMC Annual Report.

In addition to the completed dashboard for each of the ISMS CCEs, the report also addresses actions initiated to address site-wide challenges as well as reviewing actions completed to address commitments from the previous fiscal year. The completed Nevada Site Office ISMC Annual Report is approved by each participating organization, thereby further assisting in enhancing ownership and consensus.

IV. Conclusions

This innovative approach to evaluation the long-term effectiveness of DOE ISMS implementation has proved to consistently assist Nevada Site Office contractors, and NNSA/NSO personnel, with identification of best practices as well as opportunities for improvement. Use of this performance dashboard process has also further instilled ISMS tenets, and supporting safety culture attributes, into contractor implementing mechanisms and reinforced the importance of long-term ISMS implementation at the management level. Perhaps most importantly, use of this performance dashboard process is ensuring that DOE ISMS program requirements will continue to remain on the forefront and provide value verses being viewed as yet another regulatory requirement.

V. References

DOE P 411.1, Safety Management Functions, Responsibilities, and Authorities Policy

DOE P 450.4, Safety Management System Policy

DOE M 450.4-1, Integrated Safety Management Safety Manual

Department of Energy Acquisition Regulation (DEAR) clauses promulgated in 48 Code of Federal Regulations (CFR) 48 CFR 970.1100-1, Performance-Based Contracting; 48 CFR 970.5204-2, Laws, Regulations, and DOE Directives; and 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution

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